PHILADELPHIA MEDICAL TIMES.

SATURDAY, NOVEMBER 14, 1874.

ORIGINAL LECTURES.

CLINICAL LECTURE

ON THE USE OF DIGITALIS IN DISEASES OF THE HEART.

No. I.

Delivered at the Philadelphia Hospital

BY H. C. WOOD, JR., M.D.

Reported by Dr. JOHN GUITÉRAS.

THERE are, gentlemen, primary physiological facts concerning the action of digitalis which I shall to-day lay down somewhat dogmatically as the premises for the discussion of the subject. I do this because time is wanting in which to give you the proofs of these premises, even if they were not out of place in a clinical lecture-room; and I do it the more willingly because those of you who may be inclined to be skeptical can find these proofs in detail in my treatise upon therapeutics.

By experiments on the lower animals two things have been definitely ascertained: 1, that in the lower animals digitalis is a very powerful stimulant to the inhibitory apparatus of the heart; and 2, that it is also a powerful stimulant to the muscular substance or its contained ganglia.

We know the first because after the administration of the drug, when the heart has already been affected by it and is beating slowly, if the inhibitory nerves be cut, the organ springs, as it were, into an intense rapidity of action. The drug stimulates the cardiac muscle, because the amount of work performed by the heart is vastly increased under its influence, even when the viscus is disconnected from the body. We also know as a probable fact that digitalis causes a general vaso-motor spasm, a contraction of the muscular walls of the vessels. Thus much for the observations made on the lower animals.

When digitalis is administered to man, the first thing we observe is a diminution in the number of heart-beats and an alteration of the character of the pulse, which becomes full, and hard, and strong. You can recognize by the feel of the blood-wave that both the force of the contraction of the heart and the amount of blood thrown out during the systole are increased. If the drug is given in poisonous doses the pulse may, it is true, become rapid, and smaller than normal. The meaning of this can be explained by referring again to the animal. We find that here the same phenomena are observed, and that if a very large dose is given the heart may be suddenly arrested in systole from irritation of the cardiac muscle; before this happens, for a time, the tendency to contract is so great that the systole will occur before the complete filling up of the cavities. Two short imperfect waves are thus produced instead of one long one: this is the double beat,—forming a dicrotic pulse. In man the "dicrotic pulse" of digitalis is classical, and its mechanism is evidently the same as that of the double arterial wave in the lower animals: instead of a long pause and a full dilatation, the first attempt at diastole is interrupted by an abortive systolic contraction. As in animals, probably in these cases also, the apex of the heart scarcely relaxes at all. Again, a person under the influence of digitalis may have a heart beating 50 or 60 per minute when in the recumbent posture, but on sitting up the pulse may suddenly become weak and mount to 100 or 120. The action of digitalis has been carried in such a case to the point at which an excess will throw stimulation into overstimulation and imperfect contraction. The act of rising brings an extra strain on the heart, and the muscle loses its power of regular action.

Digitalis, then, in man, by its action on the inhibitory apparatus, prolongs the period of diastole, thus giving time for the ventricles to fill up with more blood than usual, and also increases the muscular power of the heart, so that when it contracts a greater volume of blood is thrown with a greater force into the arterial system. Before we begin to apply these principles, remember also that the vascular system under the control of the vaso-motor nerves is probably kept in a state of contraction by the influence of digitalis.

Almost nothing but common sense is needed now to apply these facts to the treatment of heart-diseases. If what has been said is true, digitalis ought to be useful when there is a deficiency of heart-power. Remember that it is not a rag that will stop up a leak; and do not fall into the common error of expecting the drug to perform impossibilities. It cannot tighten a leaking valve. It cannot open and smooth down a contracted orifice. In other words, in valvular lesions it can only indirectly remedy the defects; and, although often you will get the most surprising results from its use, yet in every case of valvular lesion there comes, sooner or later, a stage when digitalis is powerless. It is when the valves are healthy, and the cardiac failure is due simply to weakness of the muscular walls, that digitalis exerts its most wonderful powers. Nothing is more marvellous in clinical medicine than the relief you can sometimes rapidly afford in cases of simple dilatation of the heart. The following extract from my private note-book will probably do more than any declamation to impress this fact upon you:

Mr. D., æt. 55, when first visited in the morning was found in a condition of intense cardiac dyspnœa. There was no cardiac murmur, and nothing to indicate a valvular lesion; but the heart-sounds were very feeble, and the impulse was exceedingly weak and fluttering; its area as well as that of the percussion-dulness was widely extended. The urine was albuminous, and the patient was passing only three or four ounces in the twenty-four hours. The sick man sat during the whole day and night leaning against the back of a chair, struggling for breath. He would fall asleep for an instant, the respirations becoming feebler and more and more distant, until the face grew livid and death-like, when suddenly he would awake with a violent

start, and enter upon a succession of labored, gasping, struggling respirations. In three or four minutes he would become quiet; then the respirations would grow slower and slower until at times they would be entirely suspended for nearly a minute, when he would awake with a start as before. For several weeks, under the care of a notorious dispenser of diluted nothings, this man had spent in this manner nights and days of horror with death staring him in the face. He assured me that he had not been conscious of sleeping for over a week, and that he only wanted to get sufficient relief to allow him to get to his home in the far West and make some business arrangements before going the long journey. He was ordered fifteen drops of tincture of digitalis every two hours. At the end of twelve hours the effects were already manifested. The pulse had fallen from 102 to 94, and it was fuller and stronger than before. The agony of the spells was slightly relieved by the administration of morphine. Quinine and stimulants were also given. In the next twenty-four hours seventy-five drops of the tincture were given, and the pulse fell to 84 and became full, strong, and regular. He passed over a pint of urine. During the ensuing night the patient took no digitalis, and his pulse was not so strong in the morning as it had been, although only 86; during the day following he was given forty-five drops of the tincture; in the twenty-four hours he passed one and a half pints of urine.

Not to weary you with details, I will tell you that, continuing the use of the drug, in the course of two or three days the spells of dyspnœa almost disappeared, and he was able to sleep in his bed. In a few weeks this man returned to Omaha, where he died suddenly a few weeks later.

Let me give you, gentlemen, another lesson from my note-book:

A physician leaving town for a few days asked me to take charge of a lady patient of his, whom we found in our visit together very much in the same condition as the case just described. She had been taking five or ten drops of tincture of digitalis three times a day. I suggested a large increase of the dose; and my friend, turning to the patient, said, "Doctor, this woman has been in this chair many weeks; I have done all I could for her, but life is a heavy burden to her: she wants to die. You can't do more than kill her: if anything offers a prospect of relief, she wants it, no matter what are the risks. She is well pleased to have you kill her." The patient nodded acquiescence. It was the strangest scene I ever witnessed in a sick-room. Digitalis was therefore ordered in large and constantly-increasing doses. The result was that, a few weeks subsequently, when my colleague returned and rang the door-bell of the house, this woman came down from the third story to let him in.

The dilated heart is weak, and also is embarrassed by that weakness. Owing to its want of power, the circulation begins to fail; then instantly through the nervous system come the demands from all the tissues: more blood, new blood, better blood, is wanted. The heart is irritated beyond measure; it gets flustered, as it were, and its beats become rapid, irregular, and even more inefficient than at first; the diastole never lasts long enough for the ventricle to fill itself, the systole for the ventricle to empty itself. Then it is that digitalis lays its strong grasp upon the organ and bids it keep still; it gives it time to fill itself with blood, and power to propel this blood through the system. In this way it is that the tissues, being satisfied, cease to urge the heart, that the lungs clear, and the dyspnœa abates.

Never as long as you live, gentlemen, give, in these cases of rapid pulse with cardiac weakness, aconite or veratrum viride. They are the very antagonists of digitalis, and when the latter does good they would act as true poisons.

Suppose we now consider the opposite extreme to dilatation,—namely, hypertrophy of the heart; where the organ heaves and throbs and the whole frame is shaken by the powerful impulse. Digitalis will very readily bring about in this heart a condition of spasm, and the patient may drop dead from syncope, depending upon a contracted heart. Thus digitalis, by stimulating a muscle already too powerful, does harm in simple hypertrophy of the heart. Here it is that veratrum viride and aconite are of service. Veratrum viride, whilst stimulating slightly the inhibitory apparatus, weakens most decidedly the muscular force of the heart. Under its use the pulse grows weaker and smaller.

There is another disease of the heart not connected with valvular lesion, in which digitalis is of great service. I refer to the irritable heart. It is most frequently found in soldiers, and in persons subjected for a long time to muscular strains.

As an instance of this irritable heart occurring in civil life, I mention the following case which I recently saw. A robust young man was in training for a rowing-regatta on the river. After a while he began to lose his wind sooner than his companions; and at last he had to give up the exercise altogether, for he was hardly able to walk up-stairs without severe palpitations and distress about the heart.

Irritable heart is nearly always due to over-strain of the viscus, is generally associated with weakness, and usually tends towards the production of cardiac dilatation. It is, I suspect, in some measure dependent upon a loss of power in the cardiac inhibitory apparatus. For obvious reasons, then, in most cases of irritable heart digitalis is of the utmost service. In some instances, however, the tendency is towards hypertrophy, and not towards dilatation. Under such circumstances, veratrum viride, not digitalis, is indicated.

In valvular disease with dilatation there always is weakness of the heart. Here the effect of digitalis is not so marked as in simple dilatation; but still, by regulating the heart's action, it probably diminishes the leakage of blood, and, by giving strength to the muscle, makes up to a certain extent for the deficiency.

Some of you may have seen me prescribe digitalis in cases of hypertrophy with valvular disease, and you may think that I contradict myself; but it is not so. The mere existence or non-existence of hypertrophy in a case of valvular disease is no criterion for the administration of the drug. The point to be decided is whether there be or be not *relative* hypertrophy; whether the increase in the strength of the cardiac muscle has or has not been proportional to the increase in the work required of it. To make this clearer, let us suppose that the healthy heart has to exert a force equal to 100 to pump the blood through the system. When there

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is a leakage, the amount of work being increased, the amount of force needed will also be much greater. Suppose that the amount of work needed of the diseased heart then equals 200. It may be that hypertrophy shall occur under these circumstances to such an extent as to double the cardiac power; then all will be well: double work and double power will mutually balance each other. If, however, the increase of power shall fall short, amounting only, let us suppose, to 150, the organ is really in the condition of dilated heart. It is not the amount of power in the muscle, but the proportion of power to the demand, that is the question. A heart may be absolutely hypertrophied, but relatively dilated. Hence it is that the great question for the therapeutist is not to know which valve is diseased, but whether there is force enough for the demand. This is the criterion that must guide you in the administration of digitalis.

Practically, I believe the minute diagnosis of the exact character of the valvular lesion is often not important, and the question as to the availability of digitalis may be determined by studying the condition of the system. If the heart cannot pump the blood with sufficient power, of course the arterial system will be comparatively empty, whilst the veins will be full. Imagine the mitral valve to be eroded; at each contraction of the left ventricle there is a certain amount of blood thrown back into the auricle; this becomes distended, and cannot empty itself properly; the pulmonary veins opening into the auricle become engorged, and fail to carry the aerated blood away from the lungs. These become congested, so that the right heart, whose business it is to pump venous blood into the lungs, fails to do so properly, becomes distended, and prevents the unloading of the venous system through the two venæ cavæ; as a consequence of this general venous engorgement, œdema and dropsy come on. Almost always when you have venous congestions and dropsies the heart is weak; and you may set it down as a practical rule, with exceedingly few if any exceptions, that cardiac general venous congestions and dropsies call for digitalis.

In concluding this lecture, I call attention to the man before you as illustrative of the value of digitalis in giving temporary relief in cases of the most desperate and hopeless character. You will also notice the fact that in my treatment I have been guided by the general symptoms rather than by the cardiac lesion. Owing to the irregular and feeble action of the heart, the indistinctness of the murmurs, and the fact that auscultation distresses the patient exceedingly, I have been unable to make a positive, accurate diagnosis; in fact, at my first visits the condition of the patient was such that I did not even attempt a cardiac examination.

George R., æt. 43, German; shoemaker; admitted Oct. 3, 1874, into the house, complaining of nothing but dyspnœa, with which he had been suddenly attacked a month before, whilst working in a damp cellar. The dyspnœa was very great; the urine albuminous; the abdomen very hard and tender. There were two marked lateral areas of dulness, which presented distinctly the outlines of the liver and spleen, the edge of the liver-dulness extending to within one inch of the crest of the ilium. There was some œdema of the feet. All these various evidences of damming back of the blood in the abdominal organs betrayed an intense cardiac obstruction. On the morning of the 6th of October the patient's pulse was 112, very nearly what it had been since admission, and he had passed only eighteen ounces of urine in the last twenty-four hours. He was then ordered f℥ss of infusion of digitalis every three hours. To-day, the 10th of October, the shortness of breath is better, and he eats better, because the congestion of the stomach has been relieved. We must expect to find also a similar relief in the other abdominal organs. On percussion, the liver-edge is found two inches higher up than at the last measurement. The enlargement of the spleen has almost disappeared. The pulse, which was exceedingly weak, has become large and hard, and does not reach above 100. The congestion of the kidneys has been much relieved: we find that he now passes thirty-six ounces of urine in the twenty-four hours.

This man, then, has been very much improved, and yet we do not know what is the matter with his heart. The presence of so much portal congestion would seem to point towards the existence of disease of the right heart.

At a future lecture, gentlemen, I shall point out more in detail how digitalis is of value in especial cardiac valvular diseases, and how it is sometimes absolutely curative, and shall also speak of its danger and mode of administration.

ORIGINAL COMMUNICATIONS.

SCLEROSIS OF THE SPINAL CORD, WITH ATROPHY OF THE MOTOR CELLS IN THE ANTERIOR HORNS OF THE GRAY SUBSTANCE.

Read before the Pathological Society of Philadelphia

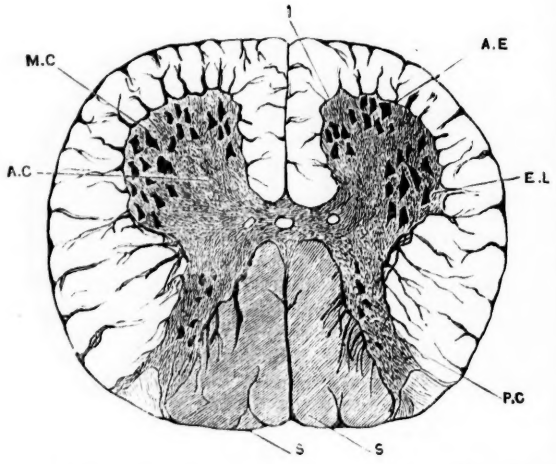
BY R. M. BERTOLET, M.D.

THE first series of specimens exhibited under the microscopes are transverse cuts of the spinal cord of an ordinary case of locomotor ataxy. The clinical records of the case are preserved by Dr. Pepper.

The alterations that have occurred in this cord have been limited chiefly to the posterior columns, giving rise to such decided gray degeneration in this section as to be distinctly visible to the naked eye; the translucent wedge-shaped segments, extending from without inwards, along both sides of the posterior fissure and cornu, penetrate up to the commissure. Here, microscopically, all the medullated nerve-fibres have disappeared, their places being taken up by anastomosing bands of fibrillated connective tissue: in other words, there has been an active proliferation of the neuroglia, in consequence of which the nerve-fibres have gone under; numerous corpora amylacea being the only traces indicative of their former existence. Here and there an axis-cylinder can still be detected. This sclerosis or gray degeneration of the posterior

columns is traceable from the cauda equina up through the entire length of the cord: unfortunately, the medulla and brain of this interesting case were ruined by being placed in an improper hardening solution. This gray degeneration of the white substance does not extend into the lateral columns, nor is there any decided lesion discernible in the gray substance proper, beyond the too homogeneous appearance of the stroma. The multipolar cells do not appear smaller than in the normal cord; no appreciable alteration is found in them; certainly their number is not diminished, nor is there any diminution of the size of the anterior cornu itself.

FIG. 1.



Transverse cut through the lumbar enlargement of the spinal cord.—Case of locomotor ataxy.
S S, the sclerosed posterior columns.
P C, posterior horns.
A C, anterior horns.
M C, motor cells of the anterior horns, which are grouped into E L, the external lateral, A E, antero-external, and I, the internal group.

My object in presenting these sections and the drawings of this typical case of progressive locomotor ataxy is to contrast them with the lesions found in the cord of a well-marked case of infantile spinal paralysis.

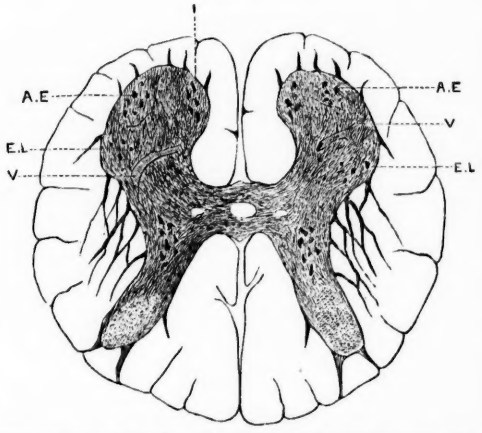
In the second set of specimens the microscopic sections also reveal the presence of extensive sclerosis of the posterior columns, showing the same exuberant development of connective-tissue fibres; in addition, there are seen disseminated in the anterior and lateral columns small isolated patches where a like indurative process is being developed,—*sclérose en plaques*. But by far the most interesting changes are those that have taken place in the anterior cornua of the gray matter (*vide* Fig. 2).

With a low power scarcely any of the large multipolar nerve-cells, ordinarily as thickly strewn in the anterior horns as the leaves in Vallombrosa, can be seen; while the lesser groups of these cells situated in the posterior horns, being more deeply stained by the carmine, appear in striking contrast with the surrounding tissues. A higher objective also fails to reveal most of the nerve-cells of the anterior cornua, which are conveniently, though not strictly, classified in three groups: 1, a large external lateral group; 2, a small antero-external group; and, 3, a smaller internal group.

In these specimens it will be seen that the first group of motor cells has nearly disappeared, their places being occupied by a dense fibrillated mass, packed with inflammatory corpuscles; while in the second group but few of the motor cells remain. These are shorn of their long process, their nuclei and nucleoli being concealed by coarse granular pigment-matter, and their edges more or less corrugated: in short, they are seen in the various stages of atrophic changes. The smallest and internal group of these cells alone remains unaffected, the caudal prolongations and nuclei being clearly visible.

It may also be observed that several enormously dilated vessels are seen coursing in the gray matter of the anterior cornua.

FIG. 2.



Transverse cut of spinal cord through the lumbar enlargement.—Case of infantile spinal paralysis. There exists marked sclerosis of the posterior and anterior columns; not represented in the drawing. Great diminution in the size and number of the nerve-cells will be observed at E L and A E, the external and antero-lateral groups, while I, the internal group, remains unaltered. V V represent large blood-vessels in the anterior horns.

These changes were most marked in the region of the lumbar enlargement, whence the cuts that are exhibited were obtained. Sections through the brachial enlargement left no doubt that the process had already ascended to this point.

Whether an actual diminution in the size of the anterior cornua has occurred from the atrophy of the nerve-cells is a matter not so readily determined, since both cornua are in this case affected in about the same degree. This diminution is, however, very apparent when only one limb is paralyzed, as in a case of infantile paralysis reported by Charcot,* and in another by Prof. Roth.† T. Thompson Dickson‡ also observed the same phenomenon in the spinal cord of a patient who had suffered amputation of the right leg fifteen years before death. Prevost and David§ found a like

* Leçons sur les Maladies du Système Nerveux, Paris, 1873, p. 59.
† Virchow's Archives, Bd. 58, S. 263, 1873. Infantile Paralysis, with complete Bibliography.
‡ Transactions of the London Pathological Society, vol. xxiv., 1873, p. 3.
§ Arch. de Physiol. Normal et Pathologique, Juillet et Septembre, 1874, planche 24.

appearance in the right horn in a case of muscular atrophy of the thenar eminence.

Were all other proofs wanting, the data alone obtained from these cases of unilateral fascicular sclerosis would be sufficient to establish beyond all controversy the functions of the large multipolar cells of the anterior horns.

The entire length and thickness of all the white fasciculi may be so far involved in this process of sclerosis that not a single nerve-fibre with its axis-cylinder can be found, and yet the muscles do not suffer directly in their nutrition so long as the nerve-cells maintain their integrity.

It is a fact now generally recognized that the lesions of progressive locomotor ataxy, although most frequently characterized by sclerosis of the posterior columns, as in the typical case above, may at times have their seat in the lateral or anterior columns. Sooner or later the slow chronic irritative processes extend towards the gray axis of the cord and consecutively involve the anterior nerve-cells, causing them to atrophy and disappear in the contracting horns. It is then that the locomotor ataxy becomes complicated with progressive muscular atrophy. Cases illustrative of this point are given by MM. Pierret* and Charcot,† and others. This consecutive involvement of the anterior horns in Duchenne's disease is stated to occur in about one-eleventh of the number of cases.

In infantile spinal paralysis, on the other hand, the development or extension of the sclerosis to the anterior horns has lately been frequently observed. Through the kindness of Drs. Parry and Jenks, I have been enabled in three cases of infantile spinal paralysis to convince myself of the existence of the most profound alterations in a great number of the motor cells, and disappearance of others. Fig. 2 is taken from one of these cases.

Remarks.—Whenever we have superadded to the symptoms of spinal paralysis those of muscular atrophy, be the case one of paralysis in the adult or infant, we may, with the greatest degree of probability, expect to find alterations in the motor cells, since there is not a single well-authenticated case on record showing muscular atrophy as a result of the spinal lesion, where the motor cells have preserved their integrity. In these cases the muscular atrophy is unquestionably induced not by a primary affection in the muscles themselves, but is consecutive to the myelitis,—the evidences of myostitis and fatty degeneration of the muscular fibres sometimes observed being therefore of secondary importance, and perhaps altogether accidental.

There are still many conflicting opinions held by different pathologists as to whether the lesions in the motor cells are primary or secondary to the inflammation of the surrounding tissues. Roth‡ is inclined to accept the latter theory in all cases, and this propagation of the inflammatory process along the neuroglia to the anterior horns with the secondary involvement of the nerve-cells cannot be denied to occur in certain cases of central myelitis, spinal pachymeningitis, and tumors of the cord. Charcot,§ on the other hand, regards the lesions of the motor cells as primary in typical muscular atrophy, in infantile spinal paralysis, and in the spinal paralysis of the adult. The exact localization and limitation of the lesions in certain cellular groups is certainly a very strong argument in favor of their being affected *ab initio*. A very interesting case has recently been published‖ where congenital atrophy and loss of power in all the muscles of the right thenar eminence were attended with a decided diminution in the size of the right anterior horn, and disappearance of its lateral motor cells. The lesion was most pronounced in the region of the seventh cervical nerve, not extending beyond the sixth and eighth; the white substance presented no appreciable alterations. The constantly increasing number of such cases where the alterations are seen confined to the anterior horns, leads us to believe that the nerve-cells are often the primary seat of the irritative process; although in each of the three cases of infantile paralysis examined there was found sclerosis of the white substance as well as in the gray axis.

The clinical histories of these cases of spinal sclerosis, even when the motor cells are involved, as manifested by the progressive muscular atrophy, generally show a very protracted affection, seldom in itself fatal unless the nerve-cells of the nucleus of the hypoglossal and of the spinal nerves are also involved at the same time as those of the brachial enlargement; then a fatal termination is prematurely induced, the symptoms of glosso-labial paralysis being superadded to the ordinary disturbance of the muscular atrophy.

It was formerly asserted that sclerosis of the lateral columns in itself is sometimes accompanied by general muscular atrophy; but later researches by the eminent neural pathologist Charcot¶ show that this is not the case unless the process has extended to the anterior horns. In a newly-described form of muscular atrophy resulting from this lateral amyotrophic sclerosis, the author, in the paper just referred to, draws attention to the predominance of the atrophy in the upper extremities, while it is at minimum in the legs, amounting to a mere simple paralysis. The arms in this affection, in spite of the paresis and rigidity, still are capable of performing certain movements, but with a trembling motion, which recalls to mind the shaking palsy observed in *sclérose en plaques*. In the few cases so far observed, a relatively short period, seldom extending beyond three years, elapsed before a fatal termination. The existence of this peculiar form of muscular atrophy, affecting uniformly all the muscles of the limb, needs further confirmatory observation.

* Arch. de Physiol., t. iii. p. 599,—Sur les Altérations de la Substance grise de la Moelle épinière dans l'Ataxia locomotrice.
† Loc. cit.
‡ Loc. cit.

§ Loc. cit., pp. 60–66.
‖ J. L. Prevost et C. David, Arch. de Physiol., Juillet et Septembre, 1874, planche 24, p. 595.
¶ Gaz. Méd., Nos. 31 and 32, Août 1, 8, 1874,—"Sclérose primitive et amyotrophique."

ON PIGMENT-FLAKES, PIGMENTARY PARTICLES, AND PIGMENT-SCALES.

BY JOSEPH G. RICHARDSON, M.D.,
Microscopist to the Pennsylvania Hospital.

THE present paper is designed to direct attention to what I conceive to be an egregious error, by which several microscopists of acknowledged ability have been ensnared,—namely, a belief in the importance of the "pigment-cells" or "scales" described by Frerichs, of Berlin, as occurring in blood;* of similar bodies found by Drs. Meigs and Pepper, of this city, under like circumstances;† and of the "pigmentary particles" or "celloids" figured by Dr. William Roberts, of Manchester, England;‡ all of which I assert to be simply and solely *accumulations of dirt* (especially the remains of red blood-corpuscles) in the little excavations on slides in ordinary use.

Such an accusation as this will, no doubt, at first excite astonishment or even ridicule, but of course no sane man would dare to bring forward a charge of this kind without strong evidence in its favor. This evidence I ask each one of my readers to furnish me after trying this simple experiment:

Examine an ordinary *plate*-glass slide microscopically for *dirt-pits* containing brownish-red matter which may be oxide of iron, or, if the slide has been long in use, old red corpuscles. If there are none already filled up with "pigment," rub in faithfully a little blood, by which means you can sometimes fill the shallow cavities with the débris of the red disks, and so imitate quickly the effect ordinarily produced in a gradual manner by frequently wiping small quantities of blood over the glass. Lastly, clean off the slide perfectly bright (so as to be sure you leave nothing but artificial *sells* upon it), and examine with a power of 250 diameters.

The bodies you probably find are accurately described by Dr. Roberts as follows:§ "Pigmentary particles; these objects deserve a passing notice from the fact that they are frequent, almost constant, if not absolutely constant, objects in urinary deposits, and have not hitherto been described. . . They never exist in such quantity as to form the entire (*sic*) of a visible urinary sediment; they are only to be recognized by the microscope. They appear especially under two conditions—namely, as free amorphous particles and cell-like bodies (or celloids). . . . The cell-like particles have a peculiar appearance, very difficult to explain. They never present an unmistakably cellular character; they appear flat, never spherical. Their outline is generally an oblique ovoid. Within this outline, which is generally of exceeding delicacy and of perfect definition, lie masses of red or orange pigment, exactly resembling the free amorphous particles already described."

Frerichs, after pointing out similar objects, says‖ that accurate diagnosis can be made in malarial fever by examining the blood for them, since a few drops "are sufficient to determine the presence or absence of large quantities of pigment."

Drs. Meigs and Pepper report finding pigment-particles in the blood of eighty-nine patients; but later these acute observers seem to have had shrewd misgivings respecting their importance, although without feeling satisfied as to their real origin.

My own suspicions were excited years ago by Frerichs's pigment-scales, and experiments on hundreds of specimens of blood from malarial and other cases convinced me of their delusive character.

Very recently, Dr. James Tyson, of this city, whilst examining in committee some ovarian fluid, pointed out to me several of Roberts's pigment-flakes, and said he had prepared drawings of these bodies for his forthcoming work. His statement naturally led me to a careful and prolonged study of the objects in question, and this in turn forced upon me the conviction above expressed.

Excluding carbon-particles (from the air), I attribute the peculiar shape of pigment-flakes which Roberts finds so "very difficult to explain" (admirably shown by Dr. Tyson in his plate), to the conchoidal figure of the minute chipped-out cavities in plate-glass; which little pits have, indeed, proved veritable pitfalls to unwary travellers over the microscopic field. These same shallow, shell-like excavations before being filled up with dirt are, probably, Frerichs's "coagula of a hyaline character, which resemble in form" (as they have a perfect right to do) the pigment-flakes, and are also Roberts's "bluish mother-of-pearl" celloids.

Dr. Roberts concludes, "I have been in the habit of noticing these objects for many years, and have regarded them as derivatives of hæmatin, but how they come to assume their peculiar forms I cannot conjecture." With him, I believe them to be "derivatives of hæmatin," but only by the *rubbing process* detailed above; and I trust that my "conjecture" as to how these hæmatin-flakes "come to assume their peculiar forms" will be satisfactory.

It seems almost incredible that the recorded appearance of these "flakes" in such various and inconsistent localities—viz., in blood, urine, the brain, in tumors, and even in the breath—has hitherto aroused no suspicion of their true nature; and it is only when we remember how few investigators have minds achromatic enough to enable them to see objective facts without subjective coloring, that we can offer a plausible explanation of this remarkable phenomenon. Does not the delusion which, if I am correct, has thus entangled several eminent observers, form one of the most curious episodes in the history of medical microscopy? and should it not serve as a warning to future generations of students?

Nevertheless, being always open to conviction, I hereby challenge any devout believer in pigment-flakes to bring me an honest specimen of urine, or blood from any ordinary case of disease, in which can be demonstrated either pigment-flakes, pigmentary particles, or pigment-scales.

PHILADELPHIA, November 7, 1874.

* Clinical Treatise on Diseases of the Liver. Sydenham Soc. Translation, London, 1860, vol. i. p. 320.
† Pennsylvania Hospital Reports, Phila., 1868, p. 108.
‡ Urinary and Renal Diseases, Second American edition, Phila., 1872, p. 125.
§ Op. cit., p. 124 et seq.
‖ Op. cit, p. 355.

IS CENTRAL PARALYSIS ONE OF THE TOXICAL EFFECTS OF THE SULPHATE OF ZINC?

BY B. F. POPE,

Assistant-Surgeon U.S.A.

MARTHA H., colored, æt. 30, a very fat, large-framed, full-blooded, and apparently healthy woman, complained to me on the 1st of July, 1874, that she had suddenly and entirely lost the use of her left hand and arm. She said that she had received no injury of either head or spine; and, furthermore, she had no recollection of headache, vertigo, or nausea prior to her attack.

Beyond this isolated fact of the loss of motor power, and a slight tactile insensibility, I could find no correlative symptoms during the first three days of her illness.

For various reasons, I was in the beginning somewhat inclined to suspect her of malingering, especially as the electro-muscular contractility was not impaired. On the fourth day, however, there was dragging of the left leg, immobility of the left facial muscles, and a dextral curvature of the tongue on its protrusion, with some thickness in speech.

In stooping, her arm dropped forward, and in walking, which she accomplished clumsily and with effort, it swung helplessly at her side.

I considered this to be an assemblage of symptoms that could hardly have been feigned by a person of her limited intelligence and power of mimicry. So I was obliged to relinquish the idea. As stated, the *cause* of her attack is apparently without explanation, save that it may be found in the following circumstance.

One week before, she had called upon me for relief from a severe and rather protracted attack of gonorrhœa. For this I prescribed an intra-vaginal injection of a solution of the sulphate of zinc,—five grains to each ounce,—to be administered on retiring for the night. She continued its use seven days; her gonorrhœa ceased one day before her paralysis appeared, and did not return again. Now, whether this sudden and unaccountable paralysis was due to the toxical effect of the sulphate of zinc, or to a suppression of her gonorrhœal discharge, or to neither, is a question of considerable moment; and for the purpose of eliciting other experience than my own I would make inquiry of some of your numerous readers for any similar cases that may have occurred within their knowledge.

The subsequent history of Martha H. is without interest, as her recovery took place within six weeks, under the tri-weekly application of both general and localized faradization. At this date (October 17, 1874) her cure is apparently perfect.

FORT STOCKTON, TEXAS.

RUPTURE OF THE SPLEEN (*British Medical Journal*, Sept. 26, 1874).—A lady aged 35, who had been subject to dyspepsia, and had suffered greatly from gastric pain due to an irritable stomach, died after a very short illness. The autopsy revealed an idiopathic rupture of the spleen, no symptoms of which had been detected during life.

NOTES OF HOSPITAL PRACTICE.

BELLEVUE HOSPITAL, NEW YORK.

CLINICAL SERVICE OF DR. ALFRED L. LOOMIS,

Professor of Pathology and Practice of Medicine at the University of the City of New York, Medical Department.

RHEUMATOID ARTHRITIS; HÆMOPTYSIS.

PROF. LOOMIS delivered a clinic as above, on Tuesday, October 20. He appears to be very popular with the students and others, and always draws a good attendance. His lectures partake rather of a conversational character. Two or more students of the advanced class are called upon to assist in studying the disease, in making the diagnosis, and in suggesting a line of treatment. It was so in this case, which will account for the peculiar manner in which some portions of the following are presented. He said,—

Gentlemen: We have this afternoon two interesting cases.

Case I.—Here is a woman whom I present especially to show you the condition of affairs described to you already in my lectures. I told you that there were deformities occurring in connection with chronic articular rheumatism. It is not necessary for us to make a diagnosis in this case. You see readily the position which the lower limbs have assumed: they are perfectly rigid, anchylosed at the joints, and drawn up at an angle. The band which you see between the knees is placed there in order to prevent sores from forming by pressure. You see the same contracted condition in the hand. You remember that I said that this form of rheumatism commences in the larger joints, involving secondarily the smaller joints; that this is a hopeless form of rheumatism from the commencement; that patients of this class go on from bad to worse. Each time that they have an acute or a subacute attack they are left in a worse condition than they were at the former attack, until they become drawn out of shape, as this woman is, and are put in a position in which they have to be cared for either by friends or in hospitals. I know of no treatment that has any power even to arrest the progress of the disease. I know of nothing that gives them even temporary relief. When I am called to a case like this in private practice, I simply make the diagnosis and give the prognosis, and say to the friends of the patient, "I am powerless to relieve." It is said by writers that the afflicted go to certain springs in carriages, and, after partaking of the waters for a longer or shorter period, walk away. But such relief, so far as I have seen it, is only for a short time: they are very soon back again. Other than the deformity, this woman's general health is pretty good. Such cases generally have good bodily health; intellection is perfectly clear; they suffer more or less pain, and, as a rule, they become opium-eaters, for which I don't blame them!

Case II.—This young woman, aged 23 years, states that she is always sick, and that seven years ago she was confined to bed with throwing off of blood. *Q.* (to patient)—Do you remember how that throwing off of blood occurred? *A.*—I coughed it off. *Q.*—Did you cough before the blood made its appearance? *A.*—Yes. *Q.*—How long? *A.*—Soon after I had an attack of the smallpox. *Q.*—When did you have the smallpox? *A.*—When I was six years old. *Q.*—How many hemorrhages have you had? *A.*—A good many. *Q.*—A dozen or two each year? *A.*—Yes; I cannot remember how many a year. *Q.*—How much is the greatest in amount which you ever spat up? *A.*—A basinful. *Q.*—What was the cause of the hemorrhage? —what brought it on? *A.*—Pain in the left side. I never lost much flesh before, but this time I have. I

began to lose flesh before I came in here. I have been in here three months. *Q.* (to the *interne*)—How many hemorrhages has she had since she came in the hospital? *A.*—So many that I don't remember: it is a clear hemorrhage; there are streaks of blood mixed with the mucus. The last hemorrhage was three or four days ago. She is unwell regularly every month; never had any trouble.

Now let me tell you (observed the professor) that nine cases out of ten of hæmoptysis which you meet with come from the bronchial mucous membrane. It does not come from the lung-substance so often as one may imagine. Now, there are two different conditions of bronchial hemorrhage. What are they? 1, distention of the capillaries of the bronchial mucous membrane; 2, weakness of the walls of these capillaries. In nine cases out of ten this bronchial hemorrhage is due to an hereditary or acquired weakness of the capillary blood-vessels of the mucous membrane of the bronchial tubes. In a large proportion of these cases, very fortunately, the patient seldom or never dies. Many persons may have perhaps forty or fifty hemorrhages before the age of twenty-four or twenty-five, then they cease, and the person may go on and live to an old age. Now, in these cases there is almost always an hereditary tendency to bronchial hemorrhage. I will ask this girl the question whether any of her family have bled like her. *A.*—Yes, on my father's side. *Q.*—Did your father have hemorrhage? *A.*—Yes.

You will find always that a certain proportion of hemorrhages occur as a result of acquired weakness of the capillaries. For instance, here is a patient developing a phthisical condition, and that condition is marked by hemorrhage, and these hemorrhages are due to weakness in the capillary vessels. That is a point I insist upon very much. You say it is a very bad sign for a man to have hemorrhage: it is a sign that he will probably develop phthisis. Now, he may or he may not: it depends upon how he manages himself. If his hemorrhage occurs after exercise, he is not so badly off as when it occurs without exercise. A man lifts to excess, and immediately after has a bronchial hemorrhage, which lasts him for some time, and he gets well and never has another. Whether hemorrhage occurs in connection with the external manifestations of phthisis or not (the person may not present the appearances of phthisis; they occur in persons sometimes in the full condition of health), it indicates that it is important that the whole nutrition of the individual should be changed. The whole habit of life must be changed in order that the nutrition may be increased, so that a repetition of hemorrhage may not take place.

Q. (to the students)—Is there any particular danger from bronchial hemorrhage? I mean any immediate danger? *A.* (by the students)—No. You may tell the patient (said the professor) positively that he will not die from bronchial hemorrhage unless the shock to the system is great. He will get better from the hemorrhage; but at the same time it tells you positively that the man is in danger from the development of phthisis. He may not, however, develop phthisis from this single hemorrhage. *Q.*—What, then, is the danger? *A.*—He may die from anæmia. *Q.*—Yes? *A.*—You may have inflammation of the lungs. *Dr. L.*—I don't think there is much danger from that; but you may have an excited condition of the bronchial tubes,—bronchitis. A condition of hyperæmia of the bronchiæ may have preceded the hemorrhage; a bronchitis may follow immediately after the occurrence of the hemorrhage. When the hemorrhage comes on under these circumstances, it is much more dangerous than without exposure.

Now the question occurs, What means would you apply? *A.*—Apply styptics. *Dr. L.*—Yes, styptics, rest, and nutrition. They even recommend ice to be applied to the chest. If a man catches a hemorrhage in Germany, he will be packed in ice as sure as fate! And that they will develop broncho-pneumonia is about as certain as that the patient is packed in ice. Then these hemorrhages are not immediately dangerous; and the most important element in the treatment, so far as controlling the hemorrhage is concerned, is—what? Keep still; rest,—that is the whole thing. Put the patient to bed, and let him lie there. You need not give styptics; you need not put him in ice. If you keep him still, and if the family and friends do not talk to him and excite him, he may get better. The capillaries are in the same condition as the lungs when ruptured. Rest, then, is the principal thing; nutrition may be added afterwards, and that is about all. But suppose he has a cough, and the blood follows: give opium in quantity sufficient to quiet the cough if he does not remain quiet without it. Is there anything else that you can do? *A.*—That is enough. *Dr. L.*—Yes, that is enough; wait. He will get along ten times better than if you throw into the stomach a dozen styptics. These are points which I wish to impress upon you: they are practical. There is more harm than a little done by the bad management of bronchial hemorrhage, and frequently the bad management is a cause of the development of phthisis.

You may have bronchial hemorrhage from other causes than exercise. A person goes up in a high latitude. If this class should go up into a high latitude, about one-third of the number would have bronchial hemorrhage simply from atmospheric changes. Those persons have a greater weakness of the capillary vessels than others, yet they may never develop phthisis.

Again, certain irritations will give rise to bronchial hemorrhages, like the irritation of gases or dust. A man has a cavity in his lungs. He is never free from danger of profuse hemorrhage when he coughs violently. Under these circumstances, hemorrhage is always dangerous. The cavity in the lungs increases; and the walls of the vessels of considerable size become involved in the ulceration. When hemorrhage occurs in connection with a cavity, it shows that the vessels are in a gangrenous condition. It is not the ordinary phthisical process, but a gangrenous condition. In this condition, the danger is that the patient will bleed so much that he will die from the loss of blood.

This woman has phthisis developed on the left apex; has had hemorrhage for seven years, without any phthisical development until within the last year or two.

W.

TRANSLATIONS.

INVESTIGATIONS ON THE INTESTINAL JUICE.—M. Leven communicated to the Société de Biologie, at a recent sitting, the results of his studies upon the intestinal juice.

This is not, as has been believed by many authors, an alkaline liquid. M. Leven has, on the contrary, always found it acid; when, as was done by M. Moreau, the intestinal juice is collected in an isolated pouch of which the nerves have been cut, a liquid is produced which is derived from the vessels, and which is not the true succus entericus.

The acidity of the intestinal juice is not produced, as Blondlot and Lehmann have supposed, by the formation of acids derived from saccharine and starchy matters.

M. Leven demonstrates this by his experiments upon dogs. When a dog is given seventy-five grains of sugar, absorption is complete in five minutes; the sugar cannot in that time become decomposed in order to produce acidity.

If a dog is given two and a half ounces of starch, sugar is found at the end of five hours in the intestines and in the blood; but the intestinal liquid remains neutral, since the sugar and the starch are not the cause of acidity. Finally, the intestinal juice is acid when it is removed from the intestine, and an infusion of intestine in tepid water gives an acid liquid.

An observation of Busch, who nourished a woman suffering from fistula of the small intestine by passing the food into the lower portion, is a proof of the digestive activity of the intestinal juice. This proceeds from the glands of Lieberkühn, the glands of Brunner, and perhaps from those of Peyer. In every case the intestinal juice may take the place of the gastric and the pancreatic juices, or at least furnish phenomena of digestion similar to those produced by the latter.

A. V. H.

VEGETATIONS OF THE VULVA.—Dr. Dubrueil has frequently had occasion at the Hôpital de Lourcine to combat vegetations of the vulva. This affection is quite rare in civil practice. It has nothing of a specific nature about it, since it may be met with among virgins, or may be brought about by gestation.

In the latter case no treatment is of use, at least until the termination of pregnancy. In other cases it is necessary to interfere, since the progressive increase in the size of these morbid productions is indefinite.

When called to a case in good time, while the vegetations are but little developed, cauterization with chloride of antimony or the acid nitrate of mercury, or excision followed by cauterization of the wounds with nitrate of silver, may be successfully employed.

It is otherwise, however, if the disease has progressed for a long time. In this case one is confronted by enormous fungosities, the pedicle of which is often difficult to make out. By what means shall they be attacked? The disease is too wide-spread for caustics to be thought of. The use of the écraseur may give rise to accidents. It often gives good results in the anal regions, since there the skin is adherent to the subjacent parts. About the vulva, where the skin is more mobile, the risk is run either of including a part of the labium majus in the grasp of the écraseur, or of allowing some of the vegetations to escape. Cutting-instruments may occasion hemorrhage difficult to suppress.

The galvano-caustic knife possesses, at least to a certain degree, the same inconveniences as the écraseur. This instrument cuts badly; the operator in using it is obliged to exert a certain degree of pressure on the tissues which he wishes to divide, and if this pressure is not very exactly adjusted there is danger of going too deeply or of leaving some of the morbid tissue behind. M. Dubrueil seeks to avoid all these inconveniences by combining the action of the cutting-instrument with that of the galvano-cautery, reducing the latter to the place of a hæmostatic. He snips off the vegetations with scissors, either by a single cut at their base, or by careful progressive movements of this instrument, if there is any doubt as to the limits of the disease.

Arriving at the tissues of the labium majus, he brings the galvano-cautery to the surface of the wound, and by this means controls the hemorrhage without entirely arresting it.

By this operation the patient is relieved at a single sitting; or, if small portions of the vegetations have escaped, a slight cauterization suffices to bring about a cure. It is well to follow the operation by dressings wet with a solution of perchloride of iron, or even of a tampon of charpie soaked in this liquid and allowed to remain in contact with the tissues for half an hour. It is true that these dressings are painful, but they are very efficacious in preventing relapses.—*L'Abeille Méd.*, Oct. 19, 1874.

A. V. H.

INFLUENCE OF TEA AND COFFEE ON THE EXCRETION OF UREA.—Brown-Séquard's *Archives*, July and September, 1874, contains a communication by Dr. E. Roux, comprising the results of a number of experiments performed on himself. His object was to ascertain the influence exercised upon the excretion of urea by the use of tea and coffee. His conclusions are as follows:

1. The quantities of urea, uric acid, chlorine, and phosphoric acid, excreted in twenty-four hours with the urine, are quite constant under the same conditions of regimen and alimentation.

2. The relation of urea to chlorine is constant when the quantity of urine eliminated is restricted within certain limits.

3. The ingestion of a large quantity of water does not augment the amount of urea, uric acid, or phosphoric acid excreted in twenty-four hours.

4. Acidity is notably diminished by the ingestion of large quantities of water.

5. The amount of chlorine eliminated in twenty-four hours is in proportion to the urine passed, and consequently to the fluids ingested.

6. In a person unaccustomed to the use of coffee, ingestion of this article augments all the solid matters of the urine.

7. This augmentation affects in particular the urea and chlorine. The relative proportion of chlorine to urea remains unchanged.

8. If coffee is used continuously, a certain toleration for it is established, its effects being less marked, and the excretion of urea and of chlorine becoming normal.

9. These conclusions are applicable as well to tea; only in the case of ingestion of tea the effects are less marked and more temporary, probably because the doses are smaller.

A. V. H.

THERAPEUTIC NOTES.

SUPPOSITORIES OF CHLORAL.—

℞ Chloral., ʒiss;
Ol. theobromæ, ʒiiss;
Ceræ alb., ℈vss.—M.

Ft. suppositor. No. vi.

℞ Ol. theobromæ, ʒv;
Ceræ alb., ʒiiss;
Glycerinæ, ℈iv;
Chloral., ʒiiss.—M.

Div. in suppositor. No. vi.

The chloral should be dissolved in the glycerin at a gentle heat, and the cacao butter and wax added subsequently.

These suppositories of chloral are recommended by Dr. Const. Paul in cancer of the uterus. His formula is—cacao butter 11 grammes, white wax 7 grammes, and chloral hydrate 6 grammes, to be divided into six suppositories.

ANTI-GASTRALGIC MIXTURE.—

℞ Tinct. castor., ʒii;
Tinct. opii, ♏xxx;
Tinct. menth. pip., ♏xv.—M.

Sig.—Eight to ten drops from hour to hour, in a tablespoonful of sweetened water. Useful in the pains of cardialgia, also in flatulence, and in pain in the intestines. —*Dr. De Savignac, Gaz. Méd. de Paris*, September 5, 1874.

COD-LIVER OIL.—M. Guichard states that for many persons cod-liver oil can be sufficiently disguised by breaking up sardines in it. The person should first be taught to like sardines, then the oil of sardines, and then it is but a short step to cod-liver oil with sardines crumbled in it.

PHILADELPHIA
MEDICAL TIMES.
A WEEKLY JOURNAL OF
MEDICAL AND SURGICAL SCIENCE.

The Philadelphia Medical Times is an independent journal, devoted to no ends or interests whatever but those common to all who cultivate the science of medicine. Its columns are open to all those who wish to express their views on any subject coming within its legitimate sphere.

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All communications must bear the name of the sender (whether the name is to be published or not), and should be addressed to Editor Philadelphia Medical Times, care of the Publishers.

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EDITORIAL.

PRIMITIVE SURGERY.

ACCORDING to a paper read by Dr. Prunières before the recent Prehistoric Congress at Stockholm, trephining was frequently practised during the prehistoric Stone Age. It is stated that the operating surgeons of that date, working with flint implements, scraped the bone, layer by layer, until the dura mater was exposed. Skulls both of children and adults, with the orifices in some instances partially cicatrized, have been found in abundance. The crania have been submitted to M. Broca, and we suppose there is no room for doubt as to the fact that the trephining was in many instances performed during life, although skulls were also discovered from which the circular pieces had apparently been removed after death. It has likewise been observed that the fragments of bone have been replaced in the skull before interment, apparently with the intent that the person should appear in the next world in his entirety.

M. Prunières is of the opinion that the operation was practised for medical purposes, to give exit to a real or imaginary disease, and also that insane persons and epileptics, the friends of the gods of the old beliefs, were especially the subjects of it, and that the pieces of removed bone were used as charms and amulets. Both M. Broca and M. Prunières think that they see in this practice the most ancient material proof of belief in another world, and that therefore even the primal man of the Stone Age was a religious animal.

AMERICAN SODA.—Five million nine hundred thousand dollars' worth of soda, it is stated, are yearly imported into the United States for use in the arts. Six hundred miles west of Omaha, and about forty miles north of the line of the Union Pacific Railroad, there is said to be an inexhaustible supply of the carbonate, in a much purer form than the crude imported ash. In one place there is a surface deposit many acres in extent, and six feet deep, whilst alkaline lakes and smaller deposits everywhere abound. It is stated that when the branch railroad is constructed to the deposit, the material can be placed in New York at about three-fifths the cost of the foreign article.

THE LONDON WOMEN'S COLLEGE.—The London Council has given the following evasive answer to Dr. Anstie's letter asking for recognition:

"That whilst they take no objection to the list of names submitted to them in the letter of the late Dr. Anstie as teachers in the proposed school, they are not prepared to imply a readiness to recognize a school which is incomplete and respecting which they have so little information."

LEADING ARTICLES.

THE PRESENT STATE OF TRANSFUSION.

II.

BEFORE going on to speak of animal transfusion, we may allude to the diversity of practice which obtains in relation to the use of arterial or venous blood. All possible permutations have been attempted; blood has been transferred from vein to vein, from artery to vein, and from artery to artery. Hüter, who proposed the latter method,* gives the following reasons in its favor: 1. The injected blood goes more slowly and regularly into the circulation than by venous transfusion. 2. If a bubble of air should remain in the syringe it would be absorbed in the blood-mass, while if a vein were injected the heart would be reached so much sooner that the danger would be greatly increased. We do not remember to have recently met with any discussion on this point. Most writers use one method or another without giving any reason therefor.

The recent revival of animal transfusion was inaugurated by Gesellius, of St. Petersburg, in 1873.† This investigator endeavored to disprove the generally accepted opinions: 1, that the blood of any given animal acts as a poison upon any other species or upon man; 2, that only defibrinated blood should be used for transfusion. Gesellius used the blood of dogs, lambs, and calves, and the transfusions were "immediate,"

* Deutsches Archiv für Klin. Med., Bd. xii. p. 1, 1871.
† Transfusion des Blutes. St. Petersburg and Leipsic.

silver canulæ being placed in the artery of the giver and the vein of the recipient and joined by a glass tube. In addition to the results of his own experiments, he adduced statistics to support his views, and combated vigorously Hüter's notion of arterial transfusion, maintaining that blood containing fibrin should be used, and that it should be transferred from the artery of the giver to the vein of the receiver.

The most striking portion of Gesellius's argument is that which relates to the advantages of animal blood for the practical use of transfusion. His work attracted immediate and general attention. Hasse, of Nordhausen,* followed with a series of experiments in the same direction, including cases of phthisis, chlorosis, cachexia, carcinoma, and uterine hemorrhage, in which he used immediate transfusion of lamb's blood. Hasse's success, particularly in phthisis, led him to assert that "in direct arterial transfusion with lamb's blood an essential aid has been discovered in the treatment of this affection."

More recently, Drs. Fidler and Birch-Hirschfeld† have investigated the utility of transfusion with lamb's blood; but their conclusions are far from being so favorable as those of Gesellius and Hasse. In fact, during a discussion upon the subject before the Dresden Association, these physicians declared that they had been unable to derive any benefit whatever in tuberculous cases from such transfusion. So far to the contrary, that in many of their cases the condition of the patient was much worse subsequent to the operation.

Meantime, the German medical press teems with accounts of transfusions with lamb's blood under every variety of circumstances. Thurn‡ gives cases of amputation, catalepsy, carcinoma uteri, poisoning by carbonic acid, post-partum hemorrhage, phthisis, etc., with varying results; Brugelmann,§ cases of anæmia, and of various lung-affections; and Klingelhofer,‖ of amputation and chronic bronchitis. The results of these investigations are in the highest degree contradictory, but for the most part may be said to tend to an unfavorable conclusion.

Turning from these clinical researches to those of a physiological character, we find the recent investigations of Landois, of Greifswald, possessing a high scientific value.

This physiologist mixed the blood of various mammals together, and also mingled the former with the blood of the frog, observing by the aid of the microscope the effect produced upon the corpuscles.

The pure serum of one species was also mixed with the blood of others, so that any action upon the latter might be more accurately observed. It was found that the blood-current, or, more properly, the serum, of certain species, exercised a decidedly solvent action upon the corpuscles of others. This action varied greatly in different cases, the corpuscles of some animals being much more resistant than those of other species. Disintegration of the corpuscles, however, invariably resulted sooner or later, followed by a precipitation of fibrin. The fibrinous precipitate being derived from the stromata of the blood-globules themselves, previous defibrination would seem a matter of indifference, since the débris thus resulting would in any case be likely to give rise to clots in the vessels. Dr. Landois suggests that in rapid transfusions, when considerable quantities of foreign blood have been thrown into the veins of an animal whose blood-corpuscles are easily soluble, dyspnœa, convulsions, asphyxia, or even death, may result.

He believes concerning the destination of the transfused blood that a certain quantity is assimilated, while another portion passes off with the excretions, particularly the urine. When the transfusion is performed slowly and only a small quantity injected, the amount which finds its way into the urine is much less, and it may be supposed that more blood is assimilated. As to any assumption on the part of the injected corpuscles of their own peculiar physiological functions, Dr. Landois thinks this hardly worth consideration. He admits, however, that experiments with the blood of identical or closely-allied species are wanting.

Looking at these investigations as representing recent advances in our knowledge of transfusion, the question may be regarded as in a very unsettled condition. Excepting Landois and a few others, the various experimenters seemed carried away by the clinical idea, without due regard for the very imperfect physiological basis upon which it rests. Transfusion is well enough when we know exactly with what fluids we are dealing and what their mutual interactions may be; but in the present state of our knowledge, or rather ignorance, this is certainly not the case.

But while the practitioner called upon suddenly to treat a case of exhaustion from hemorrhage cannot stop to debate the comparative solubility of blood-corpuscles or to decide upon the relative value of mediate and immediate methods, yet these and the other points involved should be decided for him by the clinician, whose labors, it seems to us, should be based on the results of the physiologist.

Among the many questions relating to transfusion which seem to call for an early and satisfactory solution, the following suggest themselves as of paramount importance:

1. As to the admixture of the blood of different individuals of the human species. Do the blood-globules of the giver assume their physiological functions in the blood-current of the recipient, or are they dissolved?

2. In the latter case, does the dissolved portion supply pabulum to the organism? Does it alter the physical properties of the blood-current (specific gravity, etc.), or does it change the chemical constitution of the vital fluid of the recipient?

3. Do the stromata of the injected corpuscles remain

* Tagesblatt der 46en Versammlung Deutscher Naturforscher. Wiesbaden, Nov. 7, 1873.
† Deutsches Archiv für Klin. Med.
‡ Berliner Klin. Wochenschrift, Aug. 10, 1874.
§ Ibid.
‖ Ibid.

undissolved? and, if so, under what circumstances can the least formation of débris and fibrinous precipitation be attained?

4. If the injected blood acts merely in a mechanical manner, by changing the density of the recipient's blood, or chemically, in altering its reaction, etc., what effect would be produced by the substitution of injections of albuminous or saline solutions or artificial imitations of blood? Could not some artificial preparation be made use of which would produce the effect of blood while avoiding all danger from undissolved fibrin?

5. Any further investigations relative to transfusion with the blood of the lower animals should be preceded by experiments upon the comparative solubility of their blood-corpuscles in the blood-current of the human species. Such experiments might be based upon and complementary to the very scientific investigations of Landois.

The field of discovery here open is most promising, not only for the immediate gain to science, but for the ultimate results which may accrue to practical medicine when the operation of transfusion is placed upon a rational basis.

PROPOSED RECONSTRUCTION OF THE BRITISH ARMY MEDICAL DEPARTMENT.

THE altered system of war has naturally necessitated a reconstruction of armies in all their branches, but in none was this more imperative than in the medical department. More men were wounded in a single day during the Franco-Prussian war than in a year of the Peninsular campaign, and it is therefore a matter of pressing necessity that the best possible scheme of hospital organization should be at once devised and adopted.

In the old days, when wars were protracted, when the marching was slow, and months were passed in winter quarters, the badly-wounded cases were sent to the hospitals in the rear, while such as were able to be moved accompanied the army, and fared very well, except perhaps in a retreat or during a hurried advance.

The regimental hospital system then sufficed; but now probably even those officers who are most wedded to it would confess that, while it may meet the wants of soldiers in time of peace, it is totally inadequate to the wants of a modern army in active service, and that some method for forming an efficient and well-disciplined sanitary corps must be devised. The peculiar elasticity of our army organization, the extreme improbability of the United States being suddenly plunged into any war which should involve the employment of large land-armies, the general feverish desire to avoid national expense, and the wide-spread and not altogether foolish feeling that the "Yankee" will take care of himself in all emergencies, tend to prevent any rational consideration of the subject of army medical reform in this country. But in England it is different. Men are much scarcer, and are probably more highly valued, in a military sense, there than with us. Certainly the country is liable almost at any time to be dragged into a general European war, and even to be called on to resist invasion. Army matters in England have therefore a vital interest for every one, and every branch of the service is looked after.

Accordingly, on the 1st of March, 1873, an army warrant appeared which removed medical officers from their regiments and placed them on a general staff list, thus breaking up old friendships and associations, and depriving them of their homes, and of the advantages of libraries, bands, etc., to which they had contributed. Many, too, had paid large sums for exchanges, which they lost, and, in place of being officers belonging to distinguished regiments, they found themselves without prestige or position, members of a medical staff corps, and liable to be sent to any part of the world at short notice. In compensation for these serious losses, nothing was granted except a change of title, by which an assistant-surgeon became a surgeon, and so on for the superior grades in the medical service.

The following reorganization has been proposed, as involving no expense to the country, restoring to the medical officers most of the regimental advantages which they have lost, and insuring the economy and unification which are needed for the reconstruction of the Department. The Army Medical and the Army Hospital Corps shall be amalgamated into a Royal Sanitary Corps, which shall take rank with the other scientific corps. The officers of this corps shall be permitted to wear the ordinary distinctions and badges of their rank on their uniforms, with such others as are special to the corps, but shall have no command, except over patients in hospitals, or over officers and men immediately attached to hospital establishments. Medical officers are to be completely separated from regiments, and when with them are to be attached as honorary members only, but for all duty purposes they are to be kept as long as possible with corps. When regiments are moved to new stations, their medical officer should accompany them, and after handing them over to the officers of the medical corps already there, who have had some experience of the diseases of the region, they should return to their former stations. Until experience has shown the method that is most appropriate to peace and war, the sick shall continue to be treated regimentally.

CORRESPONDENCE.

NEW YORK SOCIETIES.

NEW YORK, October 30, 1874.

AT a meeting of the New York Pathological Society, on the evening of October 28, Dr. Satterthwaite presented a tumor removed from a lady, aged 45, in the early part of the last summer. She was married twenty-three years ago, and has had three children. The first

child was an eight-months' child, which she nursed for three months, when it died. She was, however, requested by her physician to keep up the flow of milk. She used for this purpose a breast-pump. This instrument gave her great pain, which increased; and soon after, she struck her breast against a door. She nursed two children after that, and noticed that this breast —the right one—was somewhat larger than the other. About ten months before the third child was born, there was a discharge from the nipple. Some fifteen or sixteen years ago she noticed small lumps in the breast, which had grown greater until the time the breast was removed. The tumor was removed, and there has been no evidence of a recurrence. A cut was made in the tumor, and the difficulty can be traced directly into the milk-tubes. This growth, entering into the milk-duct, shows granular structures.

Dr. Erskine Mason presented a *ruptured bladder* from a boy about 11 years of age, and gave the following description of the case:

"He entered Roosevelt Hospital on the 8th of July. Six days before admission, he said he was kicked by one of the boys while playing at school. It gave him little pain, but for some hours afterwards he was unable to pass water. Later in the afternoon he was able to pass his water frequently, and apparently without trouble. Forty-eight hours after that he passed no urine, when a physician was called, who introduced a catheter and relieved him. During all this time there was comparatively no pain whatever. On the 10th of July he was running about the yard of the hospital. He was about that time placed on a bed to be thoroughly examined. Pressure upon the abdomen above the pubis produced no pain. Examination per rectum produced no pain. The only thing he complained of was that he could not pass his water, which was drawn off twice a day. On the 12th of July his urine was noticed to be bloody and offensive. He then commenced to have some pain above the pubis. He was placed in bed, and the bladder washed out. On the 19th of July he passed a few drops of water through the urethra. Everything went on rather favorably, apparently. He complained at times, however, of having a little pain over the pubis, and he eventually had cystitis, the urine being at times turbid and offensive, and sometimes dark brown. On the 20th of July his bladder was washed out about four o'clock in the afternoon. At five o'clock that same afternoon he was noticed to be reeling about, and shortly after he passed into a semi-comatose condition. The pupils were non-responsive to light. He remained in this condition about half an hour. On the 25th of July I found him suffering with pain above the pubis, and the house-surgeon had some difficulty in passing the catheter. He found an obstruction at the neck of the bladder. I never before suspected that he had rupture of the bladder, but I suspected it at that time. I passed my finger into the rectum, and I found that it had sloughed away beneath the bladder, and a swelling passed all along the ramus of the ischium. I instantly had the patient etherized, and as soon as I entered the bladder, bloody urine flowed out. The bladder was before very much distended; it now collapsed at once. On introducing my finger into the bladder, I found a condition of things that I never met with before. I felt something in the bladder; what it was I could not tell. It was like a soft tumor. That operation was done at five o'clock on the 25th of July. At nine o'clock that evening the bladder began to be distended again. The patient suffered much. He was unable to void a drop of urine. The house-surgeon introduced a catheter, and relieved him. This condition of things continued until the 26th. I then put the patient under ether again, and made another examination, passing my finger, and pushing something before it, when the urine immediately flowed freely. Still the catheter had to be used three or four times a day. On the 28th of July a large quantity of pus discharged itself from the wound, and the patient felt considerably relieved. From that time up to the period of his death the urine flowed freely from the wound.

"On the 8th of August he was taken with diarrhœa, and succumbed on the 11th. A few days before death, he had cough and other symptoms of pleurisy.

"The autopsy was made on the following day. There was recent effusion over the right kidney, and there was an infiltration of pus. The left kidney was normal. The vesical mucous membrane was covered with pus. There was a large rupture on the posterior walls of the bladder. One of the torn edges projected into the cavity of the bladder. The rupture was in front of the neck. Now the condition of things was understood, and this explained why the urine did not flow from the bladder, and also why it flowed while using Thompson's dilator. It will be seen that when the finger is passed into the bladder the flap or torn edge lies directly over the urethral opening.

"Some two years ago I had a patient with a rupture of the bladder, and at that time I looked up the literature of the subject, and found that one case, referred to by Dr. Peaslee, lived forty-two days. My case lived forty-one days. He kept around for eighteen days.

"I feel, Mr. President, that if I had made a rectal examination at the time the patient entered the hospital I probably would have detected the real nature of the disease. There was no symptom to cause one to make such an examination."

Dr. J. Lewis Smith presented the thoracic organs of an infant who died at the age of about five and a half months. Its principal symptom was a *wheezing respiration;* the temperature was normal; the respiration somewhat accelerated, nearly 40; pulse 90.

Diagnosis.—An *enlarged gland pressing upon the bronchial tubes.* The child died of diarrhœa. At the post-mortem, the bronchial glands were enlarged and ulcerated. Tubercles scarcely visible in the lungs. When there is wheezing respiration, in the absence of pulmonary signs of disease in a child under two years of age, one of three things may be looked for: 1, a pharyngeal abscess; 2, a small abscess developed on

the mucous membrane of the larynx or trachea; 3, bronchial phthisis.

At a meeting of the Medico-Legal Society, held October 22, Prof. R. Ogden Doremus, M.D., delivered an address upon "The Duties of Members of the Medical and Legal Professions, Toxicologists, Pharmaceutists, and County Officers, in Cases of Poisoning, and the Necessity for Proper Legislation on the Subject." He said it is a popular delusion that the stomach is the privileged and chosen organ for the reception of poison, and it is the organ submitted to the toxicologist for chemical test. But attention should be paid to the preservation of articles of diet and the various vessels used by or for the victim. When death has been caused by gas, unusual acuteness on the part of the chemist is required. The examination of the body of one killed by a volatile poison, such as hydrocyanic acid, ether, or chloroform, should be made only in the chemical laboratory; and, for his own part, he preferred that the intestines and not the stomach should be submitted to the tests.

Dr. Doremus closed by offering a resolution that a committee of five, consisting of two physicians, two lawyers, and one chemist, be appointed to consider the question as to what additional legislation should be secured in regard to poisoning and the sale of poisons; also as to the right of a coroner to engage the services of chemists and other experts when, in his discretion, the interests of the public demand their aid.

The resolution was passed unanimously, and the Society then went into election of officers for the ensuing year. W.

REVIEWS AND BOOK NOTICES.

CLINICAL LECTURES ON DISEASES OF THE NERVOUS SYSTEM. By WILLIAM A. HAMMOND, M.D. Reported and edited by T. M. B. CROWELL, M.D. New York, D. Appleton & Co., 1874.

The judgment which is passed upon a book depends largely upon the standard in the judicial mind. If the present volume is to be taken simply as the expression of a course of ordinary clinical lectures to students, we say unhesitatingly that those lectures are mostly very good,—well considered, logically wrought out, and clearly expressed. If, however, the book claims to be more than this,—if it is meant to be one of those masterpieces of medical art that become classic, such as Trousseau's clinical lectures,—we express the conviction that it falls far below deserving such destiny. Very many of the cases have not been followed out, and do not afford the data for positive opinions. Some of the diagnoses seem to us to rest upon insufficient grounds, and we find very little that is strikingly novel, or that is even put in a strikingly original manner. The articles are unequal; some of them being much fresher than others. But the fault which, we suppose, will most affect the sale of the book is its incompleteness, —many nervous affections being scarcely touched upon, or altogether omitted. Notwithstanding these deficiencies, the practitioner who is not in possession of or acquainted with Dr. Hammond's general treatise, or some other standard authority, will find much pleasant and instructive reading in the present volume.

THE BREATH, AND THE DISEASES WHICH GIVE IT A FETID ODOR. By JOHN W. HOWE, M.D. New York, D. Appleton & Co., 1874.

This little brochure contains about one hundred pages of large, wide-leaded type, yet affords space enough in which to say all that need be said upon the subject of which it treats. "Bad breath" is often a most unmitigated nuisance, not so much, it may be, to its owner as to his friends. To any one suffering from this affliction either in his own person or in that of his intimate acquaintances we can commend this volume as containing all that is known concerning the subject, set forth in a pleasant style. Along with a tooth-brush and a *carte blanche* at the dentist's, it would form a most suggestive and, it might be, invaluable Christmas-gift, —as a matter of course, appropriate only in certain cases.

SELECTIONS.

BROMIDE OF POTASSIUM IN HYPERTROPHY OF THE SPLEEN.

HYPERTROPHIES of the spleen are very frequent in Algeria in places where intermittent fevers prevail, and among the inhabitants of palustral regions in the more or less marshy plains of Chéliff, of the Mitidja, Issers, etc. This organ often assumes considerable proportions, compresses the intestines, embarrasses the circulation, and determines serious accidents, sometimes death. Very often, too, this engorgement resists every form of medication known up to the present day, the most energetic, the most rational, even removal from the mephitic centre, change of country, etc.

The following is a treatment which has always given me the best results. Up to the present time, of thirty-eight observations I have not had a case of failure, so that the treatment is as efficient as simple.

The volume of the spleen does not augment only after the access of fever. There are hypertrophies of this organ in malarial localities which have never been preceded by the least febrile movement. In these cases the sulphate of quinia produces no effect whatever: it may even be injurious. On the other hand, it produces very excellent results when the augmentation of the spleen is not only recent but is also the consequence of intermittent fever. We may see these hypertrophies disappear without even being obliged to administer large doses of quinia; and if they do not thus disappear entirely, they end by yielding spontaneously to the efforts of nature and a pure air. But we are not always happy in being able definitely to cut down an intermittent fever at its start. The patient does not always take the necessary precautions to arrive at a certain and solid cure. Recurrences supervene, each one of which increases the splenic engorgement. In these cases we can rely no longer on febrifuges. We must have recourse to a medication *dégorgeante, résolutive*, which up to the present time has not given results as evident and positive as the means of which I am about to speak.

It occurs also that we may completely cut down an intermittent fever, and the engorgement of the spleen may not present the least diminution. These cases, rebellious to the sulphate of quinia, yield perfectly to this new medication.

Splenic intumescence may have different forms; sometimes it is enormous, hard, painful to pressure, even to touch, gives a sense of resistance, presents an

extraordinary diameter, reaches beyond the linea alba, crowds back and seriously compresses the intestines, pushes up the heart and left lung, simulating affections of these organs, with great interference with their functions, takes up the whole of the left hypochondrium and sometimes a great part of the pelvis, as I have remarked in an Italian working at the fabrication of vegetable hair in an insalubrious lodging on the banks of the Harrach.

The great obstinacy I have often experienced in causing these hypertrophies to disappear has always interested me exceedingly; their persistence in spite of the most rational treatment and that best observed has often discouraged patients.

A most felicitous circumstance furnished me the indications which constitute the object of this work.

M. A——, colonist and landed proprietor in the Mitidja, a very intelligent man and a close observer, had inhabited the plain for fifteen to twenty years, during which time he had often been attacked with intermittent fever which had exhausted his constitution. During the time I dwelt in this country, he had several relapses with cerebral accidents, very painful and very disturbing, with delirium, nervous agitations, etc. I had frequent occasion to examine him thoroughly during and between the attacks. The spleen was enormous, hard, greatly hypertrophied. I advised different kinds of treatment, which had often been tried before, but without any result whatever.

In the course of the last year he was seized with an accession of very violent nervous attacks. I then prescribed the bromide of potassium, three grammes (forty-five grains) daily, in one potion. I was very much surprised on the tenth day of this treatment to observe that the spleen was diminished one-half. The bromide of potassium was continued twenty-five days up to complete resolution of the spleen.

I hastened to repeat this experiment to verify the fact,—I had a great number of cases under observation,—and I always obtained the same happy results.

En résumé, we may secure complete resolution of intumescence of the spleen in different conditions, by the bromide of potassium in the dose of one gramme daily for fifteen or twenty days in an infusion of linden-blossoms, orange-leaves, etc. It is rarely necessary to prolong treatment beyond thirty days.

Here is a last observation, made quite recently:

An Arab of Turkish origin, in a very comfortable pecuniary condition, had an enormous belly, resistant, very painful in the left hypochondrium, the most pronounced anæmia, and all these conditions for six years. After a month of treatment by the bromide of potassium, he resumed his occupation. Six months have now passed, and the left hypochondrium has presented its normal aspect and state. There was no recurrence whatever. No one of the numerous varieties of treatment previously employed had given this result, although they had secured him temporary relief.

I close by remarking that by this medication in the same doses, hypertrophies of the liver yield just as readily, or at least are very much improved. I propose to speak of this subject in another paper.—*M. Dr. Ch. Bernard, médecin de colonisation at Bordj-Menaïel*, in *Bulletin Gén. de Thérap.*—*The Clinic*, September 15, 1874.

GLEANINGS FROM OUR EXCHANGES.

Diagnostic Points between Cancerous and Syphilitic Ulcers (*The Medical Press and Circular*, September 30, 1874).—1. With the cancroid, save by coincidence, there is absence of anterior syphilitic affections. 2. With the cancroid, evolution is much slower in kind, and the ulceration is preceded by a rather long period, during which the lesion shows itself in the state of a dry tumor, hard, and not ulcerated. There is nothing like this in tertiary syphilides, which either ulcerate at once, originally (ulcerating form), or develop infiltrations (gummy form) which ulcerate in a relatively very rapid way. 3. In the condition of ulcer the cancer still has a hard, dry, elastic base, which shows that the ulcer is formed on a morbid tissue. Tertiary syphilitic affections at the most are ulcers, with a hard, engorged base; but this does not give the sensation of a tumor beneath the ulcerations, and has not in any case the hardness of the cancer. 4. The ulceration of the cancer is redder and more fungous than that of tertiary ulcers; it bleeds more easily; secretes an ichorous sanies more diffluent, more fetid. It is often surrounded and bordered by mammillary vegetations, like raspberries or cauliflowers, etc. 5. At a certain time the cancer has an influence on the glands, which become hard, voluminous, and may even ulcerate, bud forth, and vegetate. With syphilitic affections there is no affection of the glands, at least in the enormous majority of cases, and with the exception of inflammatory and strumous complications. 6. Whilst the specific treatment remains without any action on the cancer, it is rapidly active in tertiary symptoms. It is, then, here, as in so many other cases, to specific treatment that we should have recourse when the least doubt subsists as to the nature of the lesion.

Tetanus caused by the Spontaneous Opening of a Psoas Abscess (*Irish Hospital Gazette*, October 1, 1874).—Mr. T. Agmon Vesey reports the case of a boy, æt. 17, who had suffered for some months from a large psoas abscess which had finally burst and discharged. On the following day he felt his throat sore, and experienced some stiffness of the neck, which gradually increased and caused difficulty in mastication. The next day his right leg became very stiff, with occasional darting pains, which afterwards ascended to the abdomen and became fixed at the lower end of the sternum. He then had his first tetanic spasm, after which his condition was as follows: Face pale, brows contracted, forehead corrugated, eyes fixed, prominent, and peering, nostrils dilated, risus sardonicus fearfully marked, skin covered with perspiration, pulse feeble and rapid. The sternal pain became much aggravated before each tetanic seizure. He lingered for seven days, and then died asphyxiated. Atropia was given hypodermically, in doses increasing gradually from one-sixtieth to one-twenty-fifth of a grain every fourth hour. No unpleasant consequences were produced, but as the system came under the control of the remedy there was a remission of the tetanic state, an increase in the force of the heart's beat and in the amount of urine passed, together with a cessation of the profuse perspiration, which had before been constant. The system, however, at last refused to respond to the drug, and it was discontinued.

Cerebral Abscess (*Irish Hospital Gazette*, October 1, 1874).—Dr. J. W. Moore reports the case of a girl, æt. 24, who, when she came under observation, had been ill but two days. She was much prostrated, her pulse was weak and slow (80), her temperature high (101°.7), her tongue heavily furred, and her lips partially covered with an eruption of herpes, the vesicles being filled with an opaque, pus-like fluid. There was tenderness on pressure over the occipital region. These symptoms led to the diagnosis of epidemic cerebro-spinal meningitis, and the rapid supervention of hyperæsthesia of the back of the neck, with marked retraction of the head, seemed to justify that view of the case. Dilatation of the pupils occurred, greater in the right than in the left eye,—together with convergent stra-

bismus and conjunctivitis of the right eye. The patient died, comatose, within a week, and the post-mortem examination revealed a large abscess engaging most of the posterior part of the right hemisphere, and running down to the margin of the posterior lobe. The cavity of the right ventricle was distended with a whey-like, sero-purulent fluid. The third and the left ventricle also contained a quantity of the same fluid. The upper part of the spinal cord, the medulla oblongata, pons Varolii, and cerebellum were all quite healthy.

AMAUROSIS FOLLOWING FRACTURE OF THE NASAL BONES (*The Medical Press and Circular*, Sept. 23, 1874).—Dr. John W. Martin reports the case of a laborer, æt. 60, who received a blow from a stone, which inflicted a severe lacerated wound, involving the upper eyelid on the right side, and fractured the nasal portion of the superior maxilla, together with the palate, and, most probably, the lachrymal bones. It was followed by severe pain in the right orbit and temple, complete loss of sight on that side, and lachrymation, the tears escaping over the cheek. There were no symptoms of external inflammation. The inner canthus of the eye was displaced downwards and outwards. Examination with the ophthalmoscope revealed well-marked congestion of the retina as compared with that of the unaffected eye. Motions of both eyes normal. Bowels acting. General health good.

℞ Sol. hyd. bichloridi, ʒi
(Strength, gr. i to ʒi);
Tinct. aurantii ad ʒij.—M.

One teaspoonful to be taken three times a day, in a little water, after meals.

Strong tincture of iodine was applied to the temple.

The subsequent history was one of steady improvement and recovery of sight.

PERFORATION OF THE RECTUM (*British Medical Journal*, Sept. 26, 1874).—Dr. C. S. Jeaffreson reports the case of a girl, æt. 15, who accidentally jumped with some force upon a walking-stick, the end of which penetrated her anus, but was easily withdrawn. Symptoms of acute peritonitis occurred on the following day, and digital examination revealed a rent in the anterior wall of the rectum, which was large enough to admit the finger into the peritoneal cavity at the apex of the recto-vaginal pouch. The case terminated fatally at the end of the second day.

ARTERIO-VENOUS ANEURISM (*The Lancet*, October 10, 1874).—Mr. Timothy Holmes thinks that the study of the recorded cases of arterio-venous aneurism should lead us to derive from them the following inferences:

First. That the treatment must be directed to obliterate the orifice of communication between the artery and the vein. It is from this communication that all the secondary consequences of the affection seem to proceed; viz., varicosity of the veins, degeneration of the artery, œdema, pain, and loss of the functions of the limb. This communication may be obliterated in three ways:—1. By laying the sac open, and tying the artery above and below the wound. When this has been done, the surgeon may use his own judgment as to tying the vein also. 2. By tying the artery above and below outside the sac. 3. By compression applied to the venous orifice and to the artery above the tumor. This is best done simultaneously after Vanzetti's method. But cases have been successfully treated by first compressing the venous orifice until the latter has been obstructed by coagula; the arterio-venous is thus converted into a simple arterial aneurism, which is afterwards treated in the usual manner.

Secondly. All cases which have been dissected at a late stage of the disease prove that the artery becomes so attenuated and enlarged above the tumor that no operative interference can then be successful. Hence the necessity for treating the disease decisively at first, and for abandoning operative interference if the case is not seen sufficiently early.

MISCELLANY.

ACCORDING to Képesy, the surgeon to the Austrian Polar expedition, chocolate, as a beverage, proved most valuable of all,—the preserved meat and vegetables in tins being also of the greatest service in sustaining the strength and spirits. Mental anxiety, however, caused by the hourly-apprehended crushing of the *Tegethoff* by the ice-fields in which it was imbedded, so far neutralized the virtues of the victualling that scurvy and affections of the lungs set in, and yielded only to the incessant bear-hunting in which the officers and crew wisely indulged to keep the faculties, moral as well as physical, occupied. The fresh bear's meat, as a change from the preserved, had also its advantages; but several of the crew succumbed,—one of them being the engineer, who died of consumption, and was buried between two basalt columns in the newly-discovered land.

Two of the foremost surgeons of Milan have recently been fined for not giving information concerning a duel which was attended with serious results. The plea of professional secrecy was brought forward, but the court refused to receive it.

THE number of medical students entered in London since October, 1873, is said to have been a little under one thousand. St. Bartholomew's heads the list with 109, and is followed by Guy's with 85.

AN extract for tanning leather is now prepared from *Polygonum amphibium*, which grows extensively in the West. The plant can be had in large quantities at two dollars per ton, and contains about twenty-two per cent. of tannic acid.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM NOVEMBER 3 TO NOVEMBER 9, 1874, INCLUSIVE.

CUYLER, JOHN, SURGEON.—Detailed as member of Army Retiring Board, to assemble in New York City on the 16th instant. S. O. 240, A. G. O., November 5, 1874.

HEAD, J. F., SURGEON.—So much of S. O. 229, c. s., A. G. O., as relieves Surgeon Head from duty in Department of Dakota, is revoked. S. O. 237, A. G. O., October 31, 1874.

MOORE, JOHN, SURGEON.—Detailed as member of Army Retiring Board, New York City. S. O. 240, c. s., A. G. O.

KNICKERBOCKER, B., ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Fort Colville, W. T. S. O. 149, c. s., Department of the Columbia.

NOTSON, W. M., ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Fort Cameron, Utah Territory. S. O. 162, Department of the Platte, October 30, 1874.

BARTHOLF, J. H., ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Camp Harney, Oregon. S. O. 149, Department of the Columbia, October 22, 1874.

DE HANNE, J. V., ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Fort Mackinac, Michigan. S. O. 220, Military Division of the Atlantic, November 6, 1874.